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Citation for published version:

Candiotto, L 2018, 'Boosting cooperation: The beneficial function of positive emotions in dialogical inquiry', *Humana Mente*, vol. 11, no. 33, pp. 59-82. <<http://www.humanamente.eu/index.php/HM/article/view/25>>

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Publisher's PDF, also known as Version of record

Published In:

Humana Mente

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Boosting cooperation. The beneficial function of positive emotions in dialogical inquiry

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ABSTRACT

The aim of the paper is to discuss and evaluate the role of positive emotions for cooperation in dialogical inquiry. I analyse dialogical interactions as vehicles for inquiry, and the role of positive emotions in knowledge gain is illustrated in terms of a case study taken from Socratic Dialogue, a contemporary method used in education for fostering group knowledge. I proceed as follows. After having illustrated the case study, I analyse it through the conceptual tools of distributed cognition and character-based virtue epistemology, focusing on the two functions that emotions seem to play in the process of knowledge-building. These functions are (1) motives for joint inquiry, and (2) building blocks of the affective environment where the inquiry takes place. Positive emotions such as love and gratitude foster knowledge generation by providing an environment for posing questions and exploring aspects of a specific topic that a subject would not investigate outside of a group. This analysis helps me defend the thesis for which positive emotions are beneficial for cooperation. Because cooperation is the process that leads a group to cognitive transformation, emotions that support cooperation are beneficial for group knowledge creation as well. I assume that the beneficial function that positive emotions play within dialogical inquiry is the one of enhancement of cooperation. A beneficial factor not only comprises positive emotions that facilitate and strengthen cooperation among the agents in their epistemic practices, but also consists of such emotions that nurture the epistemic agents, enhancing their responsibility to generate epistemic goods, as propositional knowledge or explanatory understanding, for example. Thus, the responsibility toward the epistemic practice disclose the ethical dimension of group inquiry.

Introduction

Imagine a group of people, sitting in a circle, motivated to listen to what the others have to say, and holding themselves responsible for others' testimonies as well as those of their own. They endorse the commitment to actively participate

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in a joint research through dialogue, saying something valuable for the group and contributing their own expertise. Just think about the classic case of how investigations proceed is the new kind of TV crime series, where a select group of police units deliberates out-loud with all its members chipping-in to generate group knowledge.¹ Or, the real-world collectives you take part, from the team-meetings in your work-place to the community committees in your neighbourhood. These groups are usually engaged in processes of knowledge-building through dialogical inquiry, which requires — implicitly or explicitly — the adoption of rules, methods of communication, and cognitive and affective abilities.

The aim of the essay is to discuss and evaluate the role of positive emotions for cooperation in this kind of dialogical interactions. I foresee that positive emotions serve a beneficial function in dialogical inquiry, as they contribute to the establishment, support and enhancement of epistemic cooperative bonds. In (1) I will analyse a very specific case of group knowledge creation, that is, dialogical interactions as tools for inquiry, and specifically *Socratic Dialogue*, a contemporary method used in education which finds its ancient roots in Socrates' teachings. Then, in (2) I will introduce the two functions that seem to be played by positive emotions in dialogical inquiry — salience-making motives and builders of positive learning environments — and I will test them in (3), taking Socratic Dialogue as a case study for distributed cognition (Hutchins 1995), especially regarding its premise that cooperation among different functions plays a role in attaining epistemic success. In (4) I will use the conceptual tools of character-based virtue epistemology (Code 1987; Zagzebski 1996), to evaluate the role performed by positive emotions for the development of a responsible epistemic agent. Hereby, in (5) I will present the process that binds together positive emotions and cooperation for the creation of group knowledge. As positive emotions influence the quality of relationships, and because cooperation is the process that produces cognitive transformation within group knowledge as a dynamic system, this paper argues that positive emotions perform a beneficial function that enhance cooperation within a group and thus such emotions maximise group knowledge too (6). Therefore, positive emotions boost cooperation in dialogical inquiry. Finally, in (7) I will highlight

¹ By "group knowledge" I mean the knowledge generated by an epistemic group. The focus of this paper is the process of generation of this kind of collective knowledge through dialogical inquiry. I do not need to discuss the "hot issue" about the existence or non-existence of a "group mind" because my argument concerns the processes of collective inquiry, and not the nature of collective mental states.

some of the implications of this view to the joint commitment toward the generation of group knowledge, framing the beneficial function performed by positive emotions in dialogical inquiry within the ethics of knowledge. Positive emotions, such as love and gratitude function as resources for the others' well-being, promoting cooperation among the members of the epistemic group as an ethical commitment.

1. Case study

Matthew Lipman, the founder of the *Philosophy for Children* curriculum, emphasises the role of emotions in dialogical inquiry saying, “[...] what often causes a breakdown of understanding is that the parties involved are able to appreciate only the linguistic or the cognitive factors involved in their interaction with one another, but fail to achieve that exchange of emotions that would make their mutual understanding a reality” (Lipman 2003, 270). In Lipman's analysis of dialogical inquiry, emotions support mutual understanding, which is one the first requirements to satisfy in order to avoid monologues and therefore pursue group knowledge.

Emotions play important functions in the patterned practice of *Socratic Dialogue* as well. I found two main functions performed by emotions in this practice: (1) to foster posing questions, and (2) to build the affective environment where the inquiry takes place. To clarify their role, let me go back to the scene that I used in the introduction—the one of a group of people who endorse the commitment to actively participate in a joint research through dialogue—and analyse the case study through this perspective.

If this group would undertake *Socratic Dialogue* as its methodology, a participant would propose a personal experience prompting a philosophical question, which is thereby suggested to the group as a starting point for the research. The group, before providing answers, would be asked to provide other examples and, after having analysed them extensively, ask more questions.

This phase of questions arising from examples is very specific to *Socratic Dialogue*. The presenting of questions is often accompanied by a kind of “effervescence”² for the inquiry that is produced by what has been defined as

² As has been recently pointed out within the literature on collective emotions (see Páez and Rimé 2014, Collins 2014), for Emile Durkheim, a higher power emerges from a joint activity as a collective effervescence. The collective effervescence is an intensification of a shared mood, and it seems to appertain not only to

intellectual curiosity (Brady 2009; Watson 2016). Because inquiry emerges from the personal experience of a participant, this intellectual curiosity is accompanied by other affective experiences too, mostly related to existential doubts and strenuous battle for reaching a deeper understanding as a quest for meaning.³ We could then recognise epistemic anxiety and uncertainty, but also a kind of wonder and fascination for what we do not know. The phenomenology of these states is quite complex; however, for my research, it is sufficient to highlight for the moment that the existential dimension that grounds philosophical investigation into the experience imparts to *Socratic Dialogue* an affective tone that produces a resonance in the process of the inquiry. Moreover, the trust toward the practice and the group permits the expression of doubt without being disruptive, and allows association with negative emotions without irritation or discomfort (Thagard 2004), thereby encouraging being proactive and constructively engaging an agent in the quest for understanding.

As it is well known, the capacity to question is a key component of critical thinking (Nussbaum 2002) and the latter has been taken as one of the main purposes of educative practice (Winch 2005). Within the *Socratic Dialogue*'s framework, critical thinking is combined with epistemic autonomy⁴ –the capacity to think independently. Here, it is notable that this skill is produced through a dialogical inquiry with others, in which individuals “think with-one-another” (*miteinanderdenken*, Heckmann 1981). This means that the group is understood—in the *Socratic Dialogue*—as a social endeavour where critical thinking serves the epistemic benefits of the group, and not as a place where only the thoughts of the leader are spread out to the others.⁵ What is important for my analysis is that in such dialogues, the interlocutors not only “think with-one-another”, but also “they feel with-one-another”; and this imparts to the practice, as I have already highlighted, a very affective tone.

religious experience – as in Durkheim account – but to the social dimension of group knowledge too, as in this case that I am analysing.

³ Arguably, understanding is deeper than knowledge as merely a collection of information. On the differences between knowledge and understanding in education, cf. Robertson 2009. On the connection between the subject's acquisition of understanding and intellectual virtues in the social dimension of cognition, cf. Pritchard 2016.

⁴ About the relation between intellectual autonomy and testimony dependence in education, cf. Goldberg 2013.

⁵ I cannot deepen the analysis here, but let me mention that this is one of the most important feature of the German school of *Socratic Dialogue*. In fact, for Nelson, its founder, Socratic Dialogue serves as a practice of resistance against the authoritarian intragroup mechanisms that were arising in his time. Cf. Nelson 1929.

This affective dimension of the inquiry is exemplified by the experience of Minna Specht—one of the pioneers of the German version of the *Socratic Dialogue*—who has brought this practice into schools.⁶ Moreover, her experience highlights the second function that I introduced before, the one of constituting the proper affective environment for inquiry. For Specht, in fact, a friendly environment—where the pupils can trust each other, developing their ability of listening, being attentive to others, and framing questions—is required for dialogical inquiry.

The interweaving of affectivity and critical thinking is effective in one's educative endeavour for confidence⁷. Not only self-confidence, but also the trust for others builds reliability of testimony⁸ upon dialogical processes. The trust of others and mutual engagement in joint dialogical practice builds a feeling of shared responsibility—for the epistemic goals—in the group of inquiry. For Specht, promoting sensitivity toward others' feelings—as an emotional-cum-moral sensibility—nourishes the critical thinking too, and brings to the practice a very moral value. For Minna Specht, what is important here is that this aim—possibly one of the most important aims for the education of the character—should be developed through a very cooperative practice of *Socratic Dialogue*.

2. The two functions

Let me summarize what the case study has pointed to on the role of emotions in group knowledge generation. It seems that inside a process of dialogical inquiry, a certain kind of emotions—which I will analyse in a while—have (1) the motivational value to:

- make the topic more salient to the group to grasp its value;
- strive for meaning through questioning.

And (2) they build up the environment where the inquiry takes place:

- fortifying the confidence and the “togetherness” among the members of the group;

⁶ She built two schools during and after the Nazi times, where she welcomed Germans, Jews and Romani students. For more details about Minna's experience, cf. Candiotto 2017b.

⁷ I am paraphrasing here from Specht's book title, cf. Specht 1944.

⁸ About the reliability of testimony, cf. Goldberg 2012.

- establishing the trust for the others' testimony;
- enhancing the responsibility for the collective.

By themselves, these elements do not represent any sufficient conditions for the creation of group knowledge, but they enhance performance of the process. They boost the process of knowledge-building as long as they constitute the cooperative bond among the interlocutors. To understand this process, I will first analyse the role of cooperation in dialogue as a dynamic system, and then as a joint commitment. By doing this, I will analyse the nature of the emotions that are beneficial for cooperation in dialogical inquiry, which I have recognized as positive emotions, depicting them as character-traits of the responsible epistemic agent.

3. Dialogue as vehicle for the inquiry

Dialogical interactions acquire a philosophical scope within *Socratic Dialogue*, because they are functional to the achievement of knowledge, understood as a group cognitive success. The main idea is that through dialogue, we may acquire knowledge and thus dialogue may be understood as a tool for group inquiry. Fusaroli and colleagues (2014, 35) have studied dialogue within the framework of the extended cognition, for which the cognitive processes are not only embedded and embodied⁹ but also extended in the environment.¹⁰ Following this model, dialogue appears as a dynamic activity which enables individuals to create extended inter-subjective cognitive systems—from the dyad to the group—that maximise the cognitive processes. This means that social interactions—and specifically dialogue—are construed here as vehicles for knowledge; thereby, social interactions serve as social tools for the enhancement of the cognitive processes.

These results are in line with the so-called third wave of the extended mind hypothesis (Kirchhoff 2012, Gallagher 2013), for which there are cases in which

⁹ Dialogue is context sensitive and thus shows different characteristics depending on the social actors, their aims, and their environment. Very precise rules, social norms, and interactional routines scaffold dialogue and are assumed by the speakers and their reciprocal linguistic alignments; for example, replying to questions.

¹⁰ Clark and Chalmers (1998) have formulated the hypothesis of the extended cognition and extended mind for which external tools perform cognitive processes. Since then, many studies have been dedicated to this hypothesis, not without criticism, and different approaches have been developed. For a review of the different lines of investigations on the topic, cf. Menary 2010b.

cognition is socially extended through social interactions, norms, and institutions.¹¹ Gallagher (2013) has stated that social interactions, as a co-regulated coupling between at least two autonomous agents, maximise cognition. What is interesting here is that dialogical interactions are understood as one of the most prominent cases of socially extended cognition, and that — this is what I am arguing for — emotions seem to play an important function for the establishment of cooperative social interactions. Fuchs and De Jaegher (2009), by the other hand, have stressed the relevance of embodied cognition for a process of participatory sense-making and mutual understanding, emphasizing the crucial role performed by the interaction and cooperation among two or more embodied agents for generating a shared meaning. Social interactions, and thus dialogue, are embodied practices that demonstrate an inter-subjective engagement in which different dimensions of the agent are involved (Gallagher and Zahavi 2012: 167-168). Verbal communication is framed within a broader coupling, the one of embodied inter-subjective interaction, which proceeds by understanding the other's affective intentionality (Slaby 2008).¹² The cooperation between bodies— which resounds with others' experience in a process of embodied cognition—extends the individual's action possibilities (Marsh *et al.* 2009, 326).

These studies are relevant for my analysis because they draw attention not only to the extended dimension of the process of group inquiry, but also to the embodied one, that is crucial for recognising the role played by affectivity here. Integrating the embodied and the extended dimensions of the inquiry I obtain that the same embodied dialogical interactions should be understood as extended vehicles for the inquiry. This means that the specific properties of the interactions—among them the affective ones—may be understood as extended tools for group cognition, as I will explain in the next sections discussing the epistemic role of cooperation in the distributed account.

¹¹ What is distinctive of the third wave of the Extended Mind Hypothesis is that individual mental states may be partly constituted by the states of other thinkers, and more systematically by "mental institution", as the legal system for example (Gallagher & Crisafi 2009). Therefore, the difference from the original hypothesis developed by Clark and Chalmers (1998) consists in considering not just artificial external objects as tools for the extension, but also other minds.

¹² About the flow of affective information tested by modern imaging techniques during ongoing facial communication, cf. Anders *et al.* 2011.

3.1 Distributed cognition

It is necessary to recognize that there are important differences among the many types of dialogical interactions. It is true that language is intrinsically intersubjective and that social interactions require a certain level of mutual understanding. However, this is not sufficient to imply that dialogical interactions are, on their own, extended. On the contrary, I think that certain additional conditions are required, both from the environment and the agents. My thesis is based on the premise that socially-cognitive extension requires a certain level of cooperation. For my study, this means the specific type of dialogues, namely the cooperative dialogues where trust, reliance and accessibility—the three characteristics required for a tool to be part of the extended system—are some of the conditions needed to fulfil a real joint inquiry.

Therefore, although many other accounts about group knowledge may be useful to properly understand dialogical inquiry, the distributed¹³ account—the one for which group knowledge emerges from cooperative social interactions as functions of a dynamical system — explains better the mechanism that I am highlighting here, thereby making cooperation vital to attain the group's epistemic goals. For Hutchins (1995), something new emerges from the cooperation among the different functions performed by the group members to fulfil a joint task, that is, the creation of the ability of the group as an emergent property. Several individuals must gather different pieces of information, while others coordinate this information and use it to complete the task.¹⁴ Cooperation is thus this process of involving external resources that—integrated within the distributed cognitive system—leads to cognitive transformation. This means, as Menary (2010) and Menary and Kirchhoff (2014) have argued, that being engaged in a cognitive practice results in the cognitive transformation and extended expertise: the cognitive abilities of group-participants are enhanced and they spread out through the group thanks to interaction and cooperation. Menary defines “cognitive transformation” as “manipulation” of cognitive practices, “ranging from the transformation of body schemas for tool use to the transformation of representational and cognitive capacities” (Menary 2010a: 561). The author has depicted in this way the transformation of public

¹³ As explained by Goldman and Blanchard (2016) referring to Bird (2014), a distributed model deals with systems that feature information-intensive tasks which cannot be processed by a single individual. It differs from the most common summative account about groups, for which a group is the sum of its components.

¹⁴ Cf. the famous example of bringing a ship safely to the port provided by Hutchinson 1995, where the task is broken into components that are assigned to different members of the group.

representations in the cognitive environment, and this conceptualisation seems to be very effective in describing what happens in dialogical inquiry as well. In particular, for understanding the dynamical process of dialogical inquiry that produces expertise through the manipulation of a cognitive niche (Clark 2008: 76–81). The phenomenon of cognitive transformation could be also described as the process of reframing of the cognitive environments, thanks to the emergence of new and different functions. Cognitive transformation deals with a diachronic account of knowledge-building¹⁵ and focuses on the process of generation of abilities and expertise. This means that cognitive transformation is not just the emergence of properties that may disappear as soon as the group dissolves, but the learning outcome of group knowledge that builds enduring resources.

But how does this outcome may be achieved? The distributed model seems to be the one with a stronger explanatory power: the group is a dynamic system where interactions between different functions produce knowledge as a new property of the whole system. Rephrasing it for dialogical inquiry, this means that what is crucial for the creation of knowledge is the complementarity between dialogical partners, instead of the performance of identical functions that could be assured by a certain level of cooperation. This complementarity is the source of interest in theorising the structure of cooperation for the epistemic practice of dialogical inquiry.

This model is therefore very useful for analysing our case study because it explains why dialogical inquiry may produce group knowledge. Especially, within a group's dialogical inquiry, local task requirements distribute complementary cognitive actions.¹⁶ Thus, what really matters for dialogical inquiry is the cooperation—between different functions—that produces a new cognitive achievement. Therefore, this does not mean that cooperative dialogical inquiry is simply one of the many inter-subjective social activities, but that cooperation has a crucial role in the constitution of an interpersonal cognitive system and thus group knowledge creation as well.

¹⁵ Focusing on the process also means to pay particular attention to the learning processes and to the idea of human beings as capable of growth and learning (English 2013; Candiotto *forthcoming*). It differs from the standard storehouse account, for which knowledge is a collection of information stored by our brain. Cf. Klein & Baxter 2006; Menary 2007.

¹⁶ The functional coordination among the interlocutors has been studied as what permits to conceive convergence or interactive alignment among the dialogue's partners (Tylén et al. 2010; Fusaroli et al. 2013), and we possess some evidence about it in recent empirical researches in collective dialogical decision making (cf. Bahrami et al. 2010).

3.2 Distributed emotions

Next, I elaborate on the functionality of the aforementioned two functions of emotions in the cooperative process that brings about knowledge creation. The reason for addressing the topic in this way is that I assume emotions as active and dynamic intersubjective processes (Griffiths and Scarantino 2012, Candiottio 2016), grounded in relational affects (Slaby et al. 2017). For this reason, I look at the network of relationships embedded in dialogical inquiry as cognitive interdependence (Theiner and Sutton 2014), and specifically at cooperation, to depict their distributed functionality.

As already mentioned, dialogues are functionally bound to the situations in which they occur, and thus they are even more epistemically dependent on the environment and context. Emotions, as properties of the relationships, develop and change as responses to group dynamics, incorporating the affective mood of the group that enhances the singular affective experience of each member (Lawler et al. 2014, 201).¹⁷ Therefore, subjective emotional experience is not only affected but also strengthened by the relationships with others. This is exactly what happens in the process of generation of questions. Hereby, a kind of effervescence spreads out to the group, and a question moved by an interlocutor triggers another interlocutor to pose new questions too, as in a questions-based brainstorming. These researches on the collective dimension of emotions highlight how emotions may reinforce or undermine the social bond among the members of a group. Moreover, they highlight how emotions are distributed in the group, supporting or hindering the cognitive process in play, being some of the properties of the dynamic entanglement of relations.

4. Character-traits for group knowledge

A further dimension that elucidates the above two functions ascribed to emotions (salience-making motives and builders of positive learning environments) relates to virtue-based account of knowledge. For Virtue Responsibilism, the character-traits of the epistemic agent should have considered for the evaluation of knowledge, and for defining the responsible epistemic agent (Code 1987, Zagzebski 1996). Knowledge appears to be the

¹⁷ Van der Löwer and Parkinson (2014) have utilised social network analysis for understanding collective emotions as a consequence of how people interact with each other and how these interactions create a dynamic structure understandable as a group.

result of the application of intellectual virtues, or of certain abilities on the part of the epistemic agent (Pritchard 2010). If this is true, it follows that this operation should also be carried out with respect to the abilities and the character traits that are required of an epistemic agent to undertake a cooperative group knowledge creation. The case study has highlighted that among the character traits that we should recognise are certain emotions that could be seen as the affective abilities for group knowledge. I assume a developmental approach here, that has its ancient roots in Aristotle, for which emotions are one of the building blocks of virtues (Candiotto 2017a).¹⁸ Intellectual virtues, as intellectual humility or perseverance, are excellencies for knowledge seeking, and they frame emotions within patterns of responsible agency, generating specific affective abilities. Assuming the distributed account for the creation of group knowledge means to depict those affective abilities that support patterns of cooperative agency in dialogical inquiry.

Therefore, the segment of the analysis that deals with distributed cognition is the one that permits the recognition of the epistemic function performed by cooperation in dialogical inquiry, and the need for emotions to be socially distributed. The character-based virtue epistemology segment of the analysis ascribes to the agent's ability, put in system through social interactions, a crucial role in knowledge building. Their conjunction opens the analysis to the capacities required of the agents and the group to achieve cognitive success, addressing the internalist notions of character traits, abilities, and virtues to the social realm of group knowledge. Moreover, it discloses the ethical outcome of this inquiry about the beneficial function of positive emotions in dialogical inquiry. Their function is beneficial not only from a cognitive point of view, but also from an ethical one. In fact, in boosting cooperation positive emotions as love and gratitude contribute to the development of the responsible epistemic agency. Of course, they could not achieve this goal alone, and they may be exploited as well,¹⁹ but what is important from the point of view of educational theory and practice is that they have the power to fortify the commitment toward cooperative inquiry.

¹⁸ On the epistemic value of moral emotions, cf. Vaccarezza 2017. On the education of our sensitivity, and testimonial perceptual capacity, cf. Fricker 2007.

¹⁹ Even positive emotions can lead to trouble outcomes of group behaviour. They are easily exploited as tools of social conditioning and strategic incentives in marketing communication and workforce management. That's why I am stressing here the notion of "responsible epistemic agency" and I highlight the crucial function played by training in the development of affective abilities.

Analysing the case study, I find that positive emotions are a beneficial factor that may be developed as affective abilities.²⁰ For “affective ability” I mean those emotional capacities²¹ that have been regulated within patterns of decisions for the sake of knowledge (Candiottio 2017a). Positive and negative emotions seem to play different functions in our life.²² Empirical data on the adaptive value of emotions for our social, cognitive, physical and psychological health have shown that positive emotions serve the function to broaden thought-action repertoires, and the negative ones, on the contrary, to narrow them. For the “Broaden and Built Theory of Positive Emotions” (Fredrickson 1998; Fredrickson 2001), positive emotions as happiness, contentment, gratitude, love, are not only markers for flourishing, but build lasting resources for the subjects’ well-being, fostering psychological resiliency (Fredrickson 2001). Alice Isen, one of the pioneer of this field of studies, has stressed the social dimension of positive emotions, providing evidence that happiness, for example, enhances our disposition to help the others (Isen & Levin 1972). These studies, then, substantiate the beneficial function of positive emotions for the cooperative process. An important determinant of helpfulness is the potential helper’s positive affective state or “warm glow of success” (Isen & Levin 1972), which in our case of group knowledge should be translated as “epistemic success”. Specifically, it is remarkable that—as has been demonstrated—positive emotions enhance cognition (Fredrickson & Joiner 2002; Moskowitz et al. 2014). For example, interest broadens and enhances cognition by creating the urge to explore, take in new information and experiences; joy by pushing the limits and fostering creativity. Therefore, positive emotions seem not only to support cooperation in general, but also the cooperative processes embedded in group knowledge. These empirical evidences support the argument for which positive emotions are an enhancing condition for cooperation, as understood within the distributed cognition model: because cooperation is necessary for the

²⁰ I’m not saying that positive emotions are the only factor required here, but I am interested to highlight their function because they seem to have a certain kind of primacy within the epistemic role of cooperation in dialogical inquiry.

²¹ With “affective ability”, I am not referring to affectivity as a broad and indiscriminate container of any kind of affective states and bodily experience, but to the virtuous side of affectivity – the one that produces specific affective abilities as motives for knowing. In particular, I am interested in those affective abilities that strive for cooperative knowing and, thus, are at work in the emergence of group knowledge as a beneficial factor for cooperation. I maintain that positive emotions are among them.

²² The functionalist account of emotions, for which emotions should be understood in terms of their functions that are supposed come into play, fits very well with the functionalist trend in cognitive science, specifically with evolutionary psychology. For a new and philosophical interpretation of emotions in these terms, cf. Price 2015.

creation of group knowledge, positive emotions that are functional for cooperation would acquire a certain grade of primacy within the process.

5. Positive emotions for cooperation

Specht's experience is a clear and real example of the valence of positive emotions such as love, gratitude, and patience for dialogical inquiry. It seems that positive emotions reinforce certain dispositions that are crucial for group knowledge, such as trust, confidence and responsibility for the common goal, and that they establish the motivational environment necessary for fostering dialogues. Affective abilities may thus refine the function of those emotions, which I recognised in dialogical inquiry as motives for questioning and as building blocks of the affective environment. Nevertheless, to assess the function of positive emotions in dialogical inquiry, we need to deepen the analysis of their function in cooperation, and thus the question is whether positive emotions are beneficial for a cooperative environment.

From the analysis of the case study, it seems that positive emotions support cooperation. In fact, it seems that positive emotions contribute to the construction of the cooperative environment, as distributed among those members of the group who possess a joint commitment toward knowledge. Experimental studies have shown that positive affectivity²³ helps collaboration and problem solving, and negative ones, on the contrary, harm them. Clore and Storbeck (2006), and Clore and Hutchinger (2007, 393) have proven that positive affect validates and promotes; on the contrary, negative affect invalidates and inhibits accessible cognitions. Fusaroli et al. (2014, 37) have proven that interlocutors in competition or conflict display a significantly lower behavioural alignment²⁴ than cooperating interlocutors; also, Paxton and Dale (2013) have underlined that positive affect has been associated with increased levels of convergence between interlocutors.

Not only empirical evidence, but also contemporary theories of education seem to support what the case study has illustrated, that positive emotions support cooperation and group learning (Naude *et al.* 2014). Let me just point to the pioneer work of Lev Vygotszsky (1978, 86) about the zone of proximal development. The zone of proximal development makes a member develop one's

²³ By positive affectivity I mean the disposition to experience positive emotional states (cf. Watson & Naragon 2009).

²⁴ For example, it has been measured a lower tendency to adapt to each other's way of talking.

own ability due to one's relationship with another member of the group who has some specific skill that the former does not have. Groups are dynamical systems in which cognition emerges through interactions (Cooke et al. 20013). Thus, inquiring with others permits the cognitive agent to enhance one's skills, thereby allowing the agent to flourish and facilitating the group to be functionally gainful, to realise new functions that are not attainable by the individual members independently.

As I have already clarified, the theoretical framework I am adopting here is the one that understands epistemic groups as dynamical systems, for which the entanglement of different functions generates cognitive transformations. Many objections may be addressed to this model, especially from reductionism (Beckermann *et al.* 1992), as the one for which consciousness and rationality should not be understood as an emergent property. Moreover, these objections have applications beyond the mind-body problem (Kim 2005). Palermos (2016) has recently provided some replies to these objections, arguing for group mind as a distributed cognitive system. Emergent properties, in this account, do not come about in mysteriously inexplicable ways, but as functions of the system, understood in mathematical terms. Anyway, I do not need to discuss this important debate here since I am just adopting distributed cognition as the framework that seems to possess the stronger explanatory power regarding the function of emotions in cooperative dialogical inquiry.

6. The beneficial function

One may object that cooperation may be pursued for selfish reasons, for a sense of duty, or as imposed by the corporation to be more productive. Following this line of reasoning, it may be reasonable to think that cooperation may be engaged in without any positive emotions, or also that positive emotions serve cooperation for aims that are not ruled by the intrinsic value of group knowledge. Admittedly that in some situations we may collaborate with our peers just because we have to or because we think we could gain some personal profit. However, I would point out the fact that here I am depicting those cases in which cooperation is pursued for attaining group knowledge, within a practice such as *Socratic Dialogue*, that is undertaken by every agent as a joint commitment toward knowledge. I am thus referring to what has been called the “we-mode of cooperation” (Tuomela and Tuomela 2005), the one for which the goals pursued by the single agent are the same as that of the others, and are directed

toward the benefit of the group. Only in those cases, therefore, positive emotions would strengthen the process of dialogical inquiry, because they will be directed toward the fulfilment of the group's well-being. Thus, I do not claim that positive emotions are necessary conditions for cooperation and group knowledge in general, but that they are beneficial for those cases in which cooperation is pursued for the benefit of the group and it is supported by a joint commitment for the group inquiry, as I will highlight in the next section.

De Jaegher et al. (2010) have provided a clear distinction between contextual factor, enabling condition, and constitutive element. A contextual factor is simply something that influences X, a constitutive element is something that is part of X, and an enabling condition is something that not only influences the phenomenon but is also necessary for X to occur. I would add to this list the beneficial function, namely, a beneficial outcome is something that facilitates X to occur, not only supporting the process, but also enhancing it. The beneficial function is not simply a contextual factor because its presence has not just an effect on X, but it confers the causality in place with a very positive value. In the meantime, it is not a constitutive element because there are cases in which the motivations for cooperation are other than instances of positive emotions. But positive emotions serve a beneficial function because in their presence cooperation is strengthened. In fact, I assume that the beneficial function that positive emotions play within dialogical inquiry is the one of enhancement of cooperation. It is a very important condition to take in consideration, although not possessing a character of necessity, because its presence will be advantageous for the process, specifically as augmentation of the cognitive process, as I explained when discussing the distributed account. Thus, this condition is beneficial because it facilitates the process, it boosts its power, and—as I will explain in the last section—it supports moral education.

Therefore, if positive emotions are embedded in the environment, they will facilitate and strengthen the we-mode cooperation, and they will support the process of education of the character as an epistemic responsible agent for group knowledge. Finally, their value resides in the establishment of a positive affective environment for group knowledge and, thereby, supporting the education of the responsible epistemic character. Again, the affective environment is not a sufficient condition for a group's cognitive success, or for educating the character, but something that facilitates the procedure, reinforcing the collaboration. As underlined by Lawler and colleagues (2014, 201), if emotional states are positive, they would create a collective affect that

would make it easier for agents to collaborate and solve issues when they arise. They have also underlined that this kind of collective affect would be enhanced by a shared responsibility for the tasks. Positive emotions promote a higher sense of efficacy in tasks, because—as well-known—affect influences’ evaluative judgement. Moreover, such emotions improve the process not only in terms of fortifying the feeling of groupness, but also—as studied by Marsh et al. (2009)—by being an aid to memory storage and thus acting as a facilitating condition for the learning processes.

7. Positive emotions and joint commitment

From the empirical data that I introduced in the previous section, it can be derived that it would be more difficult to achieve cooperation for group knowledge without a positive affective endeavour. The point I want to introduce in this last section is that without framing positive emotions into patterns of responsible agency, as Minna Specht’s example has clarified and as I have discussed in section 4 dedicated to virtue responsibilism, the inquiry risks facing certain ethical shortcomings too. The beneficial factor, thus, pertains also to the ethical dimension of dialogical inquiry; therefore, positive emotions not only facilitate the occurrence of cooperation, strengthening its efficacy in group knowledge, but also — if well-regulated within patterns of responsible epistemic agency — are the potencies that support the moral development of the epistemic agent.²⁵

I cannot develop this line of investigation here, which would require a deep engagement with the literature dedicated to the ethics of knowledge (Fricker 2007), and its consequences in applied epistemology and ethics (Baehr 2016). However, in line with the aims of this paper, I would address this topic to the specific case of the role of cooperation in dialogical inquiry. Thereby, I am going to highlight how much positive emotions and joint commitments are involved in our dialogical cooperative agency, explaining why this topic matters for recognising the beneficial function played by positive emotions in dialogical inquiry.

²⁵ In one of my previous work, I called it the “transformative” function of emotions in the education of the character. For further analysis, see Candiotti 2017a.

Cooperative activities are characterized by shared goals to which the group members are committed (Tuomela 2000).²⁶ Following this line of thinking, Gilbert (2013) has delivered the joint commitment account, for which members of a group are connected by a joint commitment towards the same task, and they are required to cooperate to attain it. Having a shared goal entails being committed to that goal and, thus, the joint commitment assumes the normative character of obligation to fulfil the cooperative pact.²⁷ This does not mean that a pact should explicitly be signed by all the members of the group because—as has been clarified by Gilbert (1997)—the notion of joint commitment assumes a group to be a plural subject and thus does not reduce a group to a set of personal commitments.

Following this reasoning, when we analyse cooperative dialogical inquiry, we should consider the commitment that the group is embracing for epistemic success. However, in the meantime, we should also evaluate to what extent the agents are epistemically responsible towards the group's goals, which in our case is the generation of group knowledge. This means that there is a dynamic process between the top-down commitment of the group over the agents, and the bottom-up abilities of the agents that are distributed in the group. I, therefore, maintain that the agents' epistemic responsibility will also depend on their character traits and abilities—as clarified in section 4—that are spread out in the social dimension of the inquiry.

Accordingly, dialogical inquiry as vehicle for group knowledge could be characterised in the following way: we are jointly committed to acquire knowledge together, thus, we decide to take part in a dialogical inquiry in which our cognitive and affective abilities are distributed to fulfil the task of our epistemic group.

Affective abilities are here distributed in group knowledge for boosting cooperation. An ability is something that is acquired through training; in our case, the practice of Socratic Dialogue—in the Specht's educative account—is the vehicle that contributes to producing the ability. Positive emotions, in section 5, appeared to possess a kind of primacy within the abilities required for cooperative agency, as proven by much empirical evidence. What I want to

²⁶ My emphasis on the affective dimension of cooperation, nevertheless, asks to understand the cooperation in a more comprehensive way. In fact, one of the assumption of the dominant account is that we should be able to “read” the others intentions through complex cognitive abilities in order to cooperate. For a discussion of the limits of a purely cognitive approach to cooperation, cf. Fantasia et al. 2014.

²⁷ For an introduction to the notion of commitment, and to the psychology of those commitments that are jointly undertaken, cf. Michael *et al.* 2016.

highlight here is that if love, joy, patience, gratitude, and other positive emotions are spread out in the environment as character-traits of the responsible epistemic agent, the risk of undertaking unethical goals is minor. In fact, the joint commitment on its own says nothing about the inner nature of the shared goal. For example, we could hypothesise that the same Nazi comrades shared a joint commitment for pursuing their goals of ethnic cleansing, motivated by a collective hatred. Therefore, if we understand the specific kind of cooperation that we find in dialogical inquiry as a joint commitment for knowledge creation, and we appreciate the ethical value of *Socratic Dialogue*—as depicted by the analysis of our case-study, the beneficial function of positive emotions for joint commitment becomes clear as inscribed within the normative account of morality. Positive emotions, such as love, joy, and gratitude function as resources for the others' well-being, promoting ethics of care. Again, this recognition does not require embracing the thesis for which without positive emotions we could not attain a joint commitment for what we value most — in our case group knowledge, but the one that recognises the beneficial value of such emotions for the process of knowledge building as an ethical commitment.

Conclusion

Positive emotions are beneficial for group knowledge creation because they facilitate, support and enhance cooperation; this has been recognised as a beneficial factor for knowledge building, both from the naturalistic point of view of distributed cognition, and from the normative point of view of virtue responsibilism and joint commitment.

The case study has illustrated the value of positive emotions as motivations for cooperative dialogical inquiry, establishing the affective environment where group knowledge creation takes place. The analysis has been supported by empirical evidence, and has led to the thesis that positive emotions are beneficial for group knowledge creation, underlining their role in the building of cooperative bonds. I stressed the fact that such emotions, as character traits of the agents, are distributed in the network of dialogical relations, arguing that the positive affective environment is beneficial for group knowledge creation as long as it enhances cooperation among agents and their joint commitment. This has led me to highlight the ethical dimension of group knowledge in the last section.

Further researches should be made, especially about the categorisation of character traits and the group's affective abilities that support group knowledge. Nevertheless, I think I have fully underlined the benefits produced by positive emotions for dialogical inquiry, specifying the beneficial function of positive emotions for cooperation.

ACKNOWLEDGEMENTS

This work was supported by the EU under the Marie Skłodowska-Curie Individual Fellowship for the project EMOTIONS FIRST [Grant Agreement number 655143]. I presented a first draft of this essay at the Edinburgh Women in Philosophy Group, at the International Conference “Collective Intentionality X”, Delft University of Technology, 3TU Centre for Ethics and Technology, and the University of Groningen on behalf of the International Social Ontology Society (ISOS), and at the workshop “Socially Extended Emotions. Ontological and Epistemological Considerations”, Freie Universität Berlin. I would like to thank the colleagues and the public for the rich discussion, and the respondent to my paper at the Berlin workshop, Daniel Vanello, for the very useful feedbacks and constructive criticism.

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